

5 CLAIMS

What is claimed is:

10 sub-b17 1. A method of distributing in real-time geospatial data over a network connecting together computers, comprising:

designing object models for the geospatial data;

creating an object-oriented database of the geospatial data using the object models;

storing the object-oriented database on a storage unit connected to the network;

15 specifying an area of interest from a visual image, representing active data objects, displayed on a computer on the network;

querying from the computer over the network data objects in the database associated with the area of interest;

receiving in the computer over the network data objects in the database associated with the area of interest; and

20 displaying on a display unit coupled to the computer the data objects.

2. The method of claim 1, wherein in the geospatial data includes temporal information.

25 3. The method of claim 1, wherein the data objects are displayed in three dimensional.

30 4. The method of claim 1, further comprising converting two dimensional data objects to three dimensional data objects and displaying the converted three dimensional data objects.

5 5. The method of claim 1, wherein the querying is performed using an interface
system conforming to Common Object Request Broker Architecture.

6. A method of distributing in real-time geospatial data over a network connecting
together computers, comprising:

10 designing object models for the geospatial data;
 creating an object-oriented database of the geospatial data using the object models;
 storing the object-oriented database on a storage unit connected to the network;
 in response to performing a single action, querying from the computer over the network
the database data objects associated with an area of interest;
15 receiving in the computer over the network data objects in the database associated with
the area of interest.

7. The method of distributing in real-time geospatial data over a network according
to claim 6, wherein the querying includes receiving database, library, theme and features as
data objects.

8. A method of distributing in real-time data having spatial and temporal
information over a network connecting together computers, comprising:

25 storing an object-oriented database of the data having spatial and temporal information
on a storage unit connected to the network; and
 querying data objects in the database using spatial information of the data from a
terminal connected to the network.

9. A method of building and maintaining an object-oriented spatial database from
30 at least two or more data formats, comprising:
 instantiating objects of the object-oriented database, using at least two of Vector

5 Product Format (VPF), Raster Product Format (RPF), Text Product Standard (TPS),
Environmental Systems Research Institute (ESRI) shape, Generic Sensor Format (GSF), Naval
Oceanographic Office text (NAVOCEANO), and temporal information databases;
initializing spatial and non-spatial feature data of the object-oriented database; and
spatially indexing data among objects from the at least two VPF, RPF, TPS, ESRI,
10 GSF, NAVOCEANO and temporal information databases into the single, object-oriented
spatial database.

10. A real-time geospatial data distribution system, comprising:
processors, connected to each other via a network, to store in storage units connected to
15 the processors an object-oriented database of data having spatial and temporal information; and
to query data objects in the database using spatial information of the data from another
processor connected to the network.

11. The real-time geospatial data distribution system of claim 10, wherein the spatial
20 information of the data is represented as a map image and a specified area of interest
corresponding to the map image.

12. A real-time geospatial data distribution system, comprising:
processors, connected to each other via a network, to store in storage units connected to
25 the processors an object-oriented database of data having spatial and temporal information; to
specify an area of interest from a visual image, representing active data objects, displayed on
one of the processors; to query from another processor over the network data objects in the
database associated with the area of interest; to receive in the one processor data objects in the
database associated with the area of interest; and to display the data objects.

13. The real-time geospatial data distribution system of claim 12, wherein the

processor queries from the database using an interface system to transmit query messages that conform to Common Object Request Broker Architecture.

14. A real-time geospatial data distribution system, comprising:
processor means, connected to each other via a network, for storing in storage means connected to the processor means an object-oriented database of data having spatial and temporal information; and for querying data objects in the database using spatial information of the data from another processor means connected to the network.

15. The real-time geospatial data distribution system of claim 14, wherein the spatial information of the data is represented as a map image and a specified area of interest corresponding to the map image.

16. A real-time geospatial data distribution system, comprising:
processor means, connected to each other via a network, for storing in storage means connected to the processor means an object-oriented database of data having spatial and temporal information; for specifying an area of interest from a visual image, representing active data objects, displayed on one of the processor means; for querying from another processor means over the network data objects in the database associated with the area of interest; for receiving in the one processor means data objects in the database associated with the area of interest; and for displaying the data objects.

17. The real-time geospatial data distribution system of claim 16, wherein the processor means query from the database using interface means for transmitting query messages conforming to Common Object Request Broker Architecture.

18. Computer programs stored on a computer-readable media to access in real-time

5 geospatial data over a network, comprising:

an object-oriented database server code section to store data having spatial and temporal information;

a client code section; and

10 an interface code section in communication with the server code section and the client code section over the network to transmit and receive messages querying the data.

19. The computer programs of claim 18, wherein programming language of the client code section differs from programming language of the server code section.

20. The computer programs of claim 18, wherein the data includes at least two or more data formats of Vector Product Format (VPF), Raster Product Format (RPF), Text Product Standard (TPS), Environmental Systems Research Institute shape format (ESRI), Generic Sensor Format (GSF), and Naval Oceanographic Office text format (NAVOCEANO).

21. The computer programs of claim 18, wherein querying the data includes updating the data.

22. A real-time geospatial data distribution system, comprising:
processors, connected to each other via a network, to store in a storage unit connected
25 to the processor an object-oriented database of data having spatial and temporal information;
and to query data objects in the database stored in the storage unit of another processor to
update the database in the storage unit of the processor querying data objects, wherein the
processors have dual function of a server or a client-server.